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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,493	03/07/2002	Yuusuke Takamoto	381NT/44743TCO	2343

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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT	PAPER NUMBER
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3618

DATE MAILED: 04/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/091,493

Applicant(s)
Takamoto et al.

Examiner
Vanaman

Art Unit
3618



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 16, 2003
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 3, and 5-13 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 3, and 5-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 10 6) ☐ Other:

Art Unit: 3618

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Claim Rejections - 35 USC § 112

2. Claims 2, 3, 5-7 and 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 2, line 3, the phrase "for driving the vehicle body when a brake pedal is depressed" appears contradictory; in claim 12, lines 5-6, it is not clear what is meant by "change information of motor position"; in claim 13, line 9, it is not entirely clear what is meant by a "present maximum holding time" (note claims 5 and 6 recite a "preset maximum holding time"-- either the term "preset maximum holding time" lacks a clear antecedent basis in claims 5 and 6, or claim 13 should be amended to change "present" to --preset--).

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 2, 9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Takamoto et al. (US 5,467,275). Takamoto et al. teach an electric vehicle having a body (1) and a motor (3) which drives vehicle wheels and which may further be used to hold the vehicle in a stopped position (col. 1, lines 59-63) even when pressure on a brake pedal is released, and having a first means (314/315) for calculating a torque (τ_0) which corresponds to a brake operation quantity (b^*) measured by a depression of the brake pedal (X_b) and a second means (311/313) which provides a positional control and torque instruction (τ_p) which is fed to the motor to maintain the

Art Unit: 3618

stopping position, wherein for a preset period corresponding to the time between an operator removing pressure from a brake pedal and applying pressure to an accelerator pedal, the constant positional control remains active (while Sp=ON; note col. 5, lines 21-27), and further where an option is provided such that under operation of a switch (913) the vehicle is allowed to move a distance from the held position and again stopped (note col. 12, lines 7-18).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 3, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takamoto et al. Takamoto et al. teach an electric vehicle having a body and a motor which drives vehicle wheels and which may further be used to hold the vehicle in a stopped position even when pressure on a brake pedal is released, and having a first means for calculating a torque which corresponds to a brake operation quantity measured by a depression of the brake pedal and a second means which provides a positional control and torque instruction which is fed to the motor to maintain the stopping position, wherein for a preset period corresponding to the time between an operator removing pressure from a brake pedal and applying pressure to an accelerator pedal, the constant positional control remains active, and further where an option is provided such that under operation of a switch the vehicle is allowed to move a measured distance from the held position and again stopped. The reference of Takamoto et al. fails to teach the operation of a switch which allows the motion of the vehicle through a measured distance as associated with the application of pressure to the brake pedal, or the removal and subsequent application of pressure to the brake pedal.

Hands-free control of vehicle functions aside from steering is generally well known, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the actuation of the measured distance moving function in association with the vehicle

Art Unit: 3618

brake pedal, active under the condition that the positional control mode is in operation (i.e., only when Sp=ON), to allow control of this function without the need for the driver to remove his or her hands from the steering wheel.

7. Claims 5, 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takamoto in view of Hotta (US 5,934,398, filed 08/1996). The reference of Takamoto et al. is discussed above and fails to teach the holding torque applied by the motor to hold the vehicle position as being reduced after a time period. Hotta teaches a vehicle motor control system for driving a motor (11) which determines a stopped state of the motor (71), for example while holding on a hill (col. 5, lines 38-52) and calculates a time period (72, 73) after which the current supplied to the motor is decreased (61) for preventing degradation of or damage to the switching transistors (21-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a timer and motor current (and thus motor torque) limiting device as taught by Hotta to the vehicle of Takamoto et al. for the purpose of preventing damage to the motor controller of Takamoto et al., for example while holding a constant position for a lengthy time period.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takamoto as modified by Hotta as applied to claim 6 above, and further in view of Takahashi et al. (US 6,006,144, filed 08/1996). The references of Takamoto et al. and Hotta are discussed above and fail to teach the provision of an alarm for signaling the motor torque decrease. Takahashi et al. teach a vehicle control system provided with an alarm (10) for indicating an unanticipated condition associated with the vehicle driving condition. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an alarm as taught by Takahashi et al. to the vehicle of Takamoto et al. as modified by Hotta for the purpose of alerting the user to

Art Unit: 3618

the decrease in motor torque, in order to allow the user to activate another braking system (such as a friction brake) to prevent unanticipated vehicle motion.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takamoto et al. in view of Hotta and Siepker (US 5,916,062, filed 07/1997). The references of Takamoto et al. and Hotta are discussed above and fail to teach a hydraulic brake pressure device for holding the vehicle in a stopped position upon the decrease of holding torque delivered by the motor. Siepker teaches a hill-holding device which determines a braking pressure required to hold a vehicle in a stopped position and applies a corresponding braking force through a vehicle's existing hydraulic braking system (note col. 1, lines 54-58; col. 2, lines 19-28) by an independent actuating element separate from the user-operated brake pedal circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an independent actuator as taught by Siepker for actuating an existing friction braking system of the vehicle of Takamoto et al. as modified by Hotta, the independent actuator responsive to the operation of the current limiting device as taught by Hotta, for the purpose of providing a braking force from a source separate from the motor, such that during a reduction of motor torque due to overheating of the control transistors, the vehicle may remain stopped without user intervention, rendering the holding process transparent to the operator.

Conclusion

10. All claims are drawn to the same invention claimed in the application and are identical (in that they are unamended) to those finally rejected on the grounds and art of record in the last Office action. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3618

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is (703) 308-0424. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-1113.

As of May 1, 2003, any response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to :

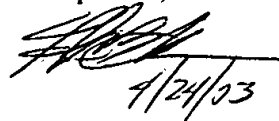
(703) 305-3597 or 305-7687 (for formal communications intended for entry;
informal or draft communications may be faxed to the same number but should be
clearly labeled "UNOFFICIAL" or "DRAFT")

The Office has also established electronic fax servers for Technology Center 3600 as follows:

703-872-9326 (Official communications)
703-872-9327 (Official After Final communications)
703-872-9325 (Customer Service)

F. VANAMAN
Primary Examiner
Art Unit 3618

F. Vanaman
April 24, 2003



4/24/03